

Serial No.: 09/560,518
Art Unit: 1762

REMARKS

Remarks

Applicant requests reconsideration of the rejection of the present pending application.

The claims remain un-amended as of this response. Remarks will include the following comments. A number of points in question implicitly referred back to the inventor's previous patent on the subject, U.S.# 5,861,630, and were not made clearly enough for proper exposition. It is believed that by demonstrating how the current application follows immediately, and builds upon the issued patent, the close linkage between the two documents will resolve much of this confusion.

The major teaching of 5,861,630 is that certain rare-earth metals duly noted in the patent, distinguish themselves from the rest of the rare-earth metals, by combining with boron in a manner that changes the fundamental properties in a beneficial manner. For the sake of brevity, YB_66 is used as a representative molecule for the family, noting that 66 also represents ratios from MB_20 to MB_xxx. Yttrium, gadolinium, terbium, dysprosium,

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holmium, erbium, thulium, lutetium, and ytterbium, are capable of forming compounds with a much greater ratio of boron to metal than the rest of the lanthanides. In addition to this, these compounds assemble in super-icosahedral structures of boron clusters, which can be made to *preferentially dissociate as clusters and nano-structures of pure boron molecules, analogous to carbon fullerenes and nanotubes*. These molecules have radically different properties from monatomic B, including but not limited to electrical conductivity, self-assembly, and the ability to form novel boron-cluster-based compounds. It is the change from the semiconducting state to the conducting state that is fundamental issue at hand in the case of Kataoka. Kataoka teaches in example 5 [0042], p. 23, that sputtering yields a covalent film of YB₆₆, wherein Becker teaches that the film is primarily composed of boron cluster ions in claims 13 and following. Therefore, allowance of this application is requested.

Respectfully submitted


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